

REMARKS

Please reconsider the application in view of the above amendments and the following remarks. Applicant thanks the Examiner for carefully considering this application and for indicating that claims 5-8, 11-14, 20, 24, and 27-30 contain allowable subject matter.

Disposition of Claims

Claims 1-32 were pending in this application. Claims 5 and 24 have been rewritten into independent form to include all of the limitations of the base claim and any intervening claims. By way of this reply, new claims 33 and 34 have been added to reflect limitations similar to those added to originally-filed claims 5 and 24, respectively. Claims 33 and 34 depend indirectly from amended independent claims 1 and 21, respectively. Thus, claims 1-34 are currently pending in this application. Claims 1, 5, 21, 24, and 31 are independent. The remaining claims depend, directly or indirectly, from claims 1, 5, 21, 24, 31.

Claims 1, 21, and 31 have been amended to include limitations similar to those in originally-filed claim 10, thereby clarifying that the three-dimensional image is generated by processing a plurality of gray-scale images, and, further, shaded by a shading unit. Accordingly, claim 10 has been amended to remove the aforementioned limitation. Support for the above mentioned amendments may be found, for example, in at least originally filed claim 10. Claims 31-32 have been amended to recite a computer readable medium. Support for these amendments may be found, for example, in Figure 6 and the associated text of the present specification. In addition, claims 10, 12, 20, and 28 have been amended to correct insufficient antecedent basis. No new matter has been added by any of the aforementioned amendments.

Allowable Subject Matter

Claims 5-8, 24, 27, 29, and 30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form. Further, claims 11-14, 20, and 28 were indicated as being allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, discussed below, and to include all of the limitations of the base claim and any intervening claims. As discussed previously, claims 5 and 24 have been rewritten into independent form to include limitations of base claims and any intervening claims. Thus, claims 5 and 24 are now allowable. Claims 6-8 are believed to be patentable by virtue of their dependency on claim 5. Accordingly, claims 5-8 and 24 now stand allowable. Further, in view of the following remarks, Applicant believes all claims to be in condition for allowance. Thus, the rewriting of claims 11-14, 20, and 27-30 into independent form is deferred at this time.

Rejection(s) under 35 U.S.C § 101

Claims 31-32 stand rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter. Claims 31-32 have been amended in accordance with the Examiner suggestions. See Office Action mailed June 29, 2007, pages 2-3. Thus, claims 31-32 now satisfy 35 U.S.C. § 101. Accordingly, withdrawal of this rejection is respectfully requested.

Rejection(s) Under 35 U.S.C § 112

Claims 10-14, 20, and 28 stand rejected under 35 U.S.C. 112, second paragraph, as being indefinite. By way of this reply, claims 10, 12, 20, and 28 has been amended to provide sufficient antecedent basis in accordance with the Examiner suggestions. As such, the recitation of claims 10-14, 20, and 28 particularly point out and distinctly claim the subject matter that the

Applicant regards as the invention. Accordingly, withdrawal of this rejection is respectfully requested.

Rejection(s) Under 35 U.S.C § 102

Claims 1-4, 9-10, 15-19, 21-23, 25-26, and 31 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,808,735 ("Lee"). To the extent that the rejections apply to the amended claims, the rejection is respectfully traversed.

One or more embodiments of the claimed invention is directed to generating a high resolution three dimensional image of a three dimensional structure. In particular, by generating a three-dimensional reconstruction image by processing a plurality of gray-scale images acquired by a transmission electron microscope, and then generating a three-dimensionally shaded image by shading the three-dimensional reconstruction image, the accuracy of the three dimensional image may increase. For example, shading the three-dimensional reconstruction image may include drawing tangential lines on an object in an image from a virtual light source, and increasing the density of a portion of the image in an opposite side of the virtual light source. *See* Specification, page 37, lines 24-32.

Accordingly, amended independent claim 1 recites, *inter alia*, "...a three-dimensional reconstruction image generating unit for generating a three-dimensional reconstruction image by processing a plurality of gray-scale images acquired by a transmission electron microscope; [and] a shading unit for generating a three-dimensionally shaded image, which is the three-dimensional image, by shading the three-dimensional reconstruction image..." Amended independent claims 21 and 31 include at least similar limitations as amended independent claim 1. The aforementioned limitations explicitly require shading a three-dimensional reconstruction image after generating the three-dimensional reconstruction image by the three-dimensional

reconstruction image unit. Lee, in contrast to the claimed invention, fails to show or suggest at least the aforementioned limitations.

Rather, Lee is directed to a method for detecting and characterizing defects on a test surface of a semiconductor wafer. *See* Lee, Abstract. Lee is completely silent with respect to shading a three-dimensional reconstruction image (previously generated by processing a plurality of gray-scale images). The aforementioned limitation was originally included in claim 10, and, in rejecting claim 10 in the Office Action mailed on June 29, 2007, the Examiner relies on a portion of Lee (column 5, lines 3-37) to illustrate shading of a three-dimensional reconstruction image. However, the Applicant respectfully submits that the portion of Lee cited by the Examiner fails to disclose, show, or suggest the aforementioned limitation. Specifically, the cited portion is directed to comparing intensity values and makes no mention of shading.

Even assuming *arguendo* that comparing intensity values could be equated to shading, the comparing of intensity values by Lee is used *to obtain an image*. *See* Lee, column 4, lines 58-67. Thus, Lee's disclosure of comparing of intensity values is used to acquire an image, and is not used on an already generated image. Thus, Lee fails to show or suggest shading the three-dimensional reconstruction image (generated by a three-dimensional reconstruction image by processing a plurality of gray-scale images acquired by a transmission electron microscope).


In view of the above, Lee fails to show or suggest the claimed invention as recited in amended independent claims 1, 21, and 31 of the present application. Thus, independent claims 1, 21, and 31 of the present application are patentable over Lee. Dependent claims are also patentable for at least the same reasons as independent claims 1, 21, and 31. Accordingly, withdrawal of the rejection is respectfully requested.

Conclusion

Applicant believes this reply is fully responsive to all outstanding issues and places this application in condition for allowance. If this belief is incorrect, or other issues arise, the Examiner is encouraged to contact the undersigned or his associates at the telephone number listed below. Please apply any charges not covered, or any credits, to Deposit Account 50-0591 (Reference Number 02008/122001).

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Respectfully submitted,

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